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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,996	05/25/2001	Atsushi Yamamoto	MTS-3255US	5806

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EXAMINER

NGUYEN, HOANG V

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,996

Applicant(s)

YAMAMOTO ET AL.

Examiner

Hoang V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 6-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 23-39 and 43 is/are allowed.
- 6) ☒ Claim(s) 4, 6-8, 11, 15-22 and 40-42 is/are rejected.
- 7) ☒ Claim(s) 9, 12-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/27/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 4, 6-8, 11, 15-22 and 40-42 rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto et al (US 6,486,847).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding claim 4, Yamamoto ‘847 (Figures 28A & 28B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception, the conductive member and the bottom member are connected to each other in a place other than the signal line or the feeding point; and a conductive ceiling member 15 covering a part of the space, wherein the ceiling member has openings 16 and 17.

Regarding claim 6, Yamamoto '847 (Figures 28A & 28B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception, a conductive ceiling member 15 covering a part of the space, wherein the conductive member extends its entire length normally of the conductive bottom member and the ceiling member; and the ceiling member has at least one opening 16.

Regarding claim 7, as applied to claim 6, Figure 28B shows that the conductive member 13 and the ceiling member 15 are connected to each other electrically.

Regarding claim 8, as applied to claim 6, Figure 28B shows that the ceiling member 15 and the side member 14 are connected to each other electrically.

Regarding claim 11, Yamamoto '847 (Figures 1A & 1B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; and a conductive ceiling member 15 covering a part of the space, wherein the ceiling member has openings 16 and 17.

Regarding claim 15, Yamamoto '847 (Figures 11A & 11B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; a dielectric member 31 that has a permittivity higher than air is provided in the space; and a

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conductive ceiling member 15 covering a part of the space, and having openings 16 and 17 in which a dielectric member is provided.

Regarding claim 16, as applied to claim 15, Figure 11B shows that the dielectric member is provided at least so as to cover a part of the space which is not covered with the ceiling conductor.

Regarding claim 17, as applied to claim 15, Figure 11B shows that the dielectric member fills the entire inside of the space.

Regarding claim 18, Yamamoto '847 (Figure 15) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; a conductive ceiling member 15 covering a part of the space; and a dielectric member 31 having a permittivity higher than air provided in the space, wherein the dielectric member has a via hole 32, and the side member includes the via hole.

Regarding claim 19, Yamamoto '847 (Figures 28A & 28B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; at least one matching element 18 is arranged apart by a predetermined distance from the conductive member, wherein the matching element and the bottom member are connected to each other electrically; and a conductive ceiling member 15 covering a part of the space, wherein the ceiling member has openings 16 and 17.

Regarding claim 20, as applied to claim 19, Figure 28B shows that at least one of the matching elements 18 is electrically connected to the conductive member.

Regarding claim 21, as applied to claim 19, Figure 29B shows that at least one of the matching elements 19 is electrically connected to at least one of the ceiling member and the side member.

Regarding claim 22, Yamamoto '847 (Figure 32) discloses an arrangement of antennas, each antenna including a conductive bottom member 11; a conductive side member 14; a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; and a conductive ceiling member 15 covering a part of the space, the ceiling member having an opening 16, and the conductive member extending its entire length normally of the conductive bottom member and the ceiling member, the method comprising a step of aligning and arranging the plural antennas in a manner to produce a direction for minimizing directivity of each of the antennas on a horizontal plane (col 22, lines 28-33).

Regarding claim 40, Yamamoto '847 (Figures 19A & 19B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; the bottom member has a feeding point on a surface thereof, the conductive member and the bottom member are connected to each other in a place other than the signal line or the feeding point; and a conductive ceiling member 15 covering a part of the space, wherein the ceiling member has openings 16 and 17.

Regarding claim 41, as applied to claim 6, Figure 11B of Yamamoto further shows a dielectric member that has permittivity higher than air is provided in the space.

Regarding claim 42, Yamamoto '847 (Figures 16A & 16B) discloses an antenna comprising a conductive bottom member 11; a conductive side member 14; and a conductive member 13 arranged in a space surrounded by the bottom member and the side member, wherein the conductive member is connected to a signal line for transmission and/or reception; a conductive ceiling member 15 covering a part of the space, wherein the ceiling member has at least one opening 16; and at least one matching element 19 which is arranged apart by a predetermined distance from the conductive member, wherein the matching element and the bottom member are connected to each other electrically.

Allowable Subject Matter

3. Claims 9 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 10, 23-39 and 43 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 9, Yamamoto '847 fails to specifically teach that the ceiling member having a periphery having a curved shaped such that the radio waves radiated from the entire periphery thus it can radiate waves under almost non-directional conditions along the horizontal plane.

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Regarding claim 10, Yamamoto '847 fails to further teach, among other features, at least one of the bottom member and the side member has an opening other than an opening for the signal line.

Regarding claim 12, Yamamoto '847 fails to specifically teach, among other features, that the openings have means of adjusting their size.

Regarding claims 13 and 14, Yamamoto '847 fails to specifically teach, among other features, that a projection of the conductive member onto the bottom member is an origin point and the bottom member is arranged in an X-Y plane, the bottom member and the side member are symmetric with respect to a Z-Y plane, and the openings are symmetrically arranged with respect to a Z-Y plane.

Regarding claims 23-39 and 43, Yamamoto '847 fails to further teach, among other features, a circuit for transmission and/or reception connected to the signal line and arranged in the space.

Correspondence

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang V Nguyen whose telephone number is (571) 272-1825. The examiner can normally be reached on Mondays-Fridays from 9:00 a.m. to 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hvn
9/24/04

A handwritten signature in black ink, appearing to read 'Hoang V. Nguyen', with a long horizontal flourish extending to the right.

**HOANG V. NGUYEN
PRIMARY EXAMINER**